

Comparative Fishing Trials

Trawl Warp Offset Experiments

Design and Sample Size Considerations

Experimental Design

- Paired Tows
- Control (No Offset)
- Treatment (Several Offset Levels)

Measurements

- Catch Differences (Numbers and Weight)
- Size Composition Differences
- Net Mensuration
- Environmental Conditions

How Many Paired Tows are Enough?

Need to Decide on:

- How much of an effect do we want to detect?
- What is the chance of detecting a statistically significant effect?
- Are we interested in a directional change?

Need Information on the variability expected in the catch differences

To get a first cut estimate of required sample size we examined comparative fishing trials between Albatross IV and Delaware II in the spring of 2002 conducted on Georges Bank and the Gulf of Maine (133 Paired Tows)

Cod caught in 78 paired tows

Should give upper-end estimate of sample size needed

Cod Results: Upper-End Sample Size Requirements

To have a 90% chance of detecting a statistically significant difference for a 50% decline in cod catch in weight would require **62 paired tows**.

To have a 90% chance of detecting a statistically significant difference for a 25% decline in cod catch in weight would require **240 paired tows**.